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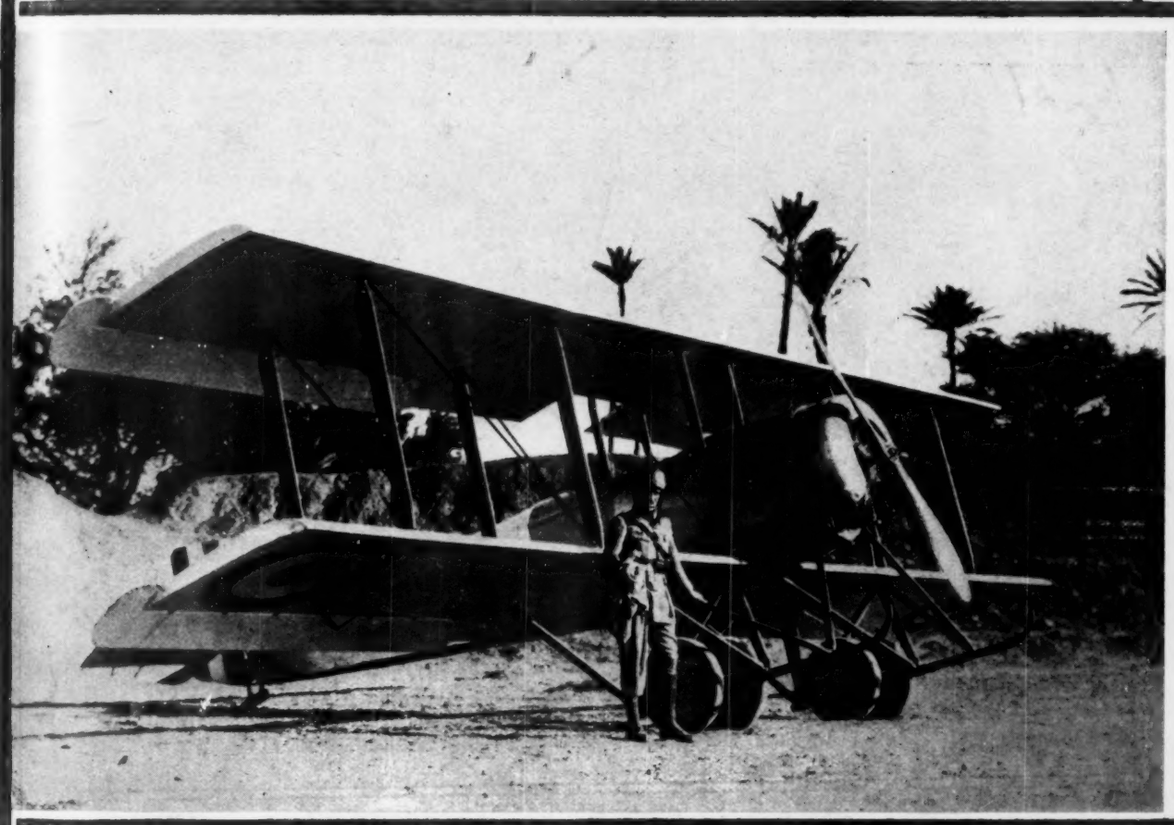

The 7 hr. Gliding Record: Lieut. Thoret and the Hanriot HD14

VOLUME XIV

Number 9

SPECIAL FEATURES

STATAX LOW POWERED ROTARY ENGINE

WHO'S WHO IN AMERICAN AERONAUTICS

IMPRESSIONS OF EUROPEAN AIR LINES

OPERATIONS OF THE AERIAL FOREST PATROL

THE GARDNER, MOFFAT CO., INC.
HIGHLAND, N. Y.
225 FOURTH AVENUE, NEW YORK

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FEBRUARY 26, 1923

AVIATION

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Vol. XIV FEBRUARY 26, 1923 No. 9

Departmental Reorganization

IN the reorganization plan for the executive departments of the federal government, as presented by President Harding, it is evident that little consideration has been given to the important position aircraft are certain to assume before long in the problem of national defense.

The only changes that appear on the surface are that the Air Service of the Army is placed in the proposed Department of Defense under an Under-Secretary for War; that the Bureau of Aeronautics of the Navy is placed under an Under-Secretary for the Navy; that the National Advisory Committee for Aeronautics is placed under the Secretary of National Defense, and that an Airways Section is created in the Bureau of Transportation under the Secretary of Commerce. The Air Mail Service remains under the Post Office Department, although the latter's name is changed to that of Department of Communications.

It will be seen from this outline that nothing save a few labels would, under the reorganization plan, be changed in those government departments which are directly concerned with aeronautics. This is greatly to be regretted, considering that when this reorganization plan was first announced it was stated that the proposed Department of National Defense would have three great divisions: War, Navy and Air.

If our air forces are to become our first line of defense in time of war, which is generally conceded by the best military thought, and if the present duplication of effort and expenditure is to be avoided, then the new scheme of national defense should obviously have given the "Air" and its direction and position co-equal in importance with the Army and the Navy. That such a scheme will be urged when the whole plan is discussed in public and in Congress is probable. Short of a separate Air Department, an autonomous bureau of aeronautics in a Department of National Defense is the *minimum* solution that will insure the adequate organization and expansion of the Fighting Air Forces along lines developed by their own experience, rather than dictated by obsolete notions of warfare. Only thus can the Air Force truly become the first line of defense of the Nation, for only thus will it be able to work out a doctrine of aerial warfare looking "from the air down" instead of "from the surface up."

Meanwhile, the National Aeronautic Association and other kindred bodies can do no greater service to the cause of aeronautics than by emphasizing how important it is for the untrammelled development of air defense to have a central grouping of all air activities within the government, under an Under-Secretary for Air. It will take courage and strong convictions to take this attitude, but one who has watched the gradual dwindling of our air forces since the war cannot but feel that if the United States is to have an air force capable of acting as the first line of defense, it will have to be organized primarily from the aeronautical, and not from the ground, viewpoint.

Civilization and Communication

ASSISTANT Secretary of the Navy, Roosevelt, in a speech delivered to the National Academy of Political and Social Science at Philadelphia on Jan. 20, forcefully presented the far reaching influence good communications have had on the shaping of civilization. He said among others:

"In the final analysis, civilization is based on communication. The advance of man has been co-incident with man's contact with men. Thought is stimulated by the interchange of ideas and commodities. The importance of communication to a country is proved by the nations in our own time and by countless illustrations in history. The backward communities are those that have but little connection with the world at large. In general, and proving the same rule, the reverse of this holds true. For the great and civilized nations of today and of the past are those whose system of communication is most perfect.

"Perhaps the greatest single civilized governmental unit of early days was the Roman Empire. By the same token, it was the Roman Empire which had the best developed system for the transmission of men, ideas and commodities. The Roman roads, for example, are proverbial for their frequency and excellence. On them and over them through the generations swept the tide of traffic of the Roman Empire. The Roman system of communications was perhaps, never equalled, let alone excelled, until within the last hundred and fifty years. Their galleys were the fastest, their roads were the shortest and best, their post system, their helio system, remained until comparatively recently, models of a lost efficiency. Through the length and breadth of their vast empire protection was afforded to commerce on land and on sea. To these excellent and well-protected lines of communication, Rome owed in the main part her greatness and her cohesion.

"Furthermore, the human race does not stand still. It either advances or slips back, for "Where there is no vision, the people perish," and it is through new contacts with others that we reach out for new ideas and new viewpoints. In all of the most brilliant ages of man, thought has been stimulated and fertilized by inter-communication. To it we owe our nation, for it was man's restless progress over uncharted seas and through untamed wildernesses that created our country and developed the civilization of the western hemisphere."

These words may usefully be pondered over by those who believe that it is premature and hence a "bad investment" to organize a national airway system which would offer aircraft, whether military or civil, the shelters, supply bases and emergency fields without which aviation is unthinkable.

Impressions of European Air Lines

The Men, the Machines, the Routes and the Flying—as seen by an American Observer

Grover Loening, B.Sc., A.M.C.E.

After travelling about 2000 miles on the various European Air Lines, one marvels at the dangerous nature of the flying that is done abroad and apparently with only few accidents. The European Air Line pilot seems to "fly on his motor" with an assurance that would cause serious misgivings to a conservative American air pilot. For long stretches, sometimes hundreds of miles, as for example from Amsterdam to Brussels, the writer was frankly worried at the manner in which the pilots of the Fokker planes on the K.L.M. crossed over the tree tops and the roofs of houses at perhaps a mean altitude of 150 ft. on a day that was not particularly thick and over a country that was cross-marked with ditches in such a manner as to make emergency landing practically impossible. Furthermore, crossing over the English Channel at a few hundred feet altitude for a distance of 30 to 40 miles in a land machine is not exactly calculated to add to the comfort of anyone who is at all familiar with flying.

Reasons for the Habit of Flying Low

There are perhaps three reasons why the Air Line pilots of Europe have gotten into this habit. The first, of course, is a great confidence in the excellent maintenance that is in general given to the motors on the better equipped air lines. The second is that the general prevalence of thick weather appears to get the pilots in the habit of flying low, and the third is by far the most obvious reason—that many of the machines used on the Air Lines have a very bad performance as far as climbing and ceiling is concerned, with the result that they would waste a great deal of time and effort in trying to climb. Other than the danger involved in this characteristic of low flying, a very serious bad effect is the discomfort to the passengers due to the rough air.

That the motor is the heart of the airplane is certainly demonstrated to one's complete satisfaction on practically all European Air Lines, and the contrast between the manner in which the airplane as a structure stands up and the manner in which the motor requires constant attention is very striking; particularly in the case of the Fokker F3 and the DH34, to both of which machines through hundreds of hours of flying very little attention need be given to the airplane, with the result that one finds in most of the maintenance esablishments that the work consists chiefly of motor overhaul.

This is particularly true of the Latécoère Line that operates from Toulouse in France to Casablanca in Africa—a line upon which the old Breguet 14 with 300 hp. Renault motor is exclusively used. The overhaul plant for the motors at Toulouse is to all intents and purposes a motor factory where the Renaults, as originally received are completely dissembled and in many important details modified and rebuilt before use in a much more thorough manner than was ever done during the war. The competent Director of the *Lignes Aêriennes Latécoère*, M. Didier Daurat, summed this work up by calling attention to the difference between a commercial and a military operation, where in a military operation, the maintenance crews readily replace a "balky" motor with a new one quickly at hand, whereas in a commercial line finances alone limited the amount of equipment to the point where every possible use had to be made of each and every motor.

Harmful Example to American Aviation

American commercial aviation development is already suffering and will seriously suffer from the example of the European Air Lines from at least two important standpoints. The large subsidies that are granted by the government and which have as a basis a perfectly sound military value in keeping a large number of load-carrying planes in commission with trained pilots ready for use as bombers in a quick emergency, make it possible for the Air Lines to charge low prices for their air travel which from a commercial standpoint are entirely fictitious. The cost of the various trips, due to the subsidies, does not represent a sound business basis upon which a commercial enterprise of this kind can be carried on. Lacking subsidies in this country, we are constantly faced with the fact that our prices for air travel, in order to build up our business on a sound basis of making a profit, will have to be so much higher than European prices that we will encounter great opposition.

The second harmful influence is the poor performance of most of the machines used on the European Air Lines. The advertised times and speeds may perhaps be done under ideal conditions which certainly did not exist at this season of the year, but nevertheless, the discrepancy between what one actually finds to be the elapsed time in travelling from point to point and the theoretical rapidity advertised in the Air Line circulars is very great and very disappointing.

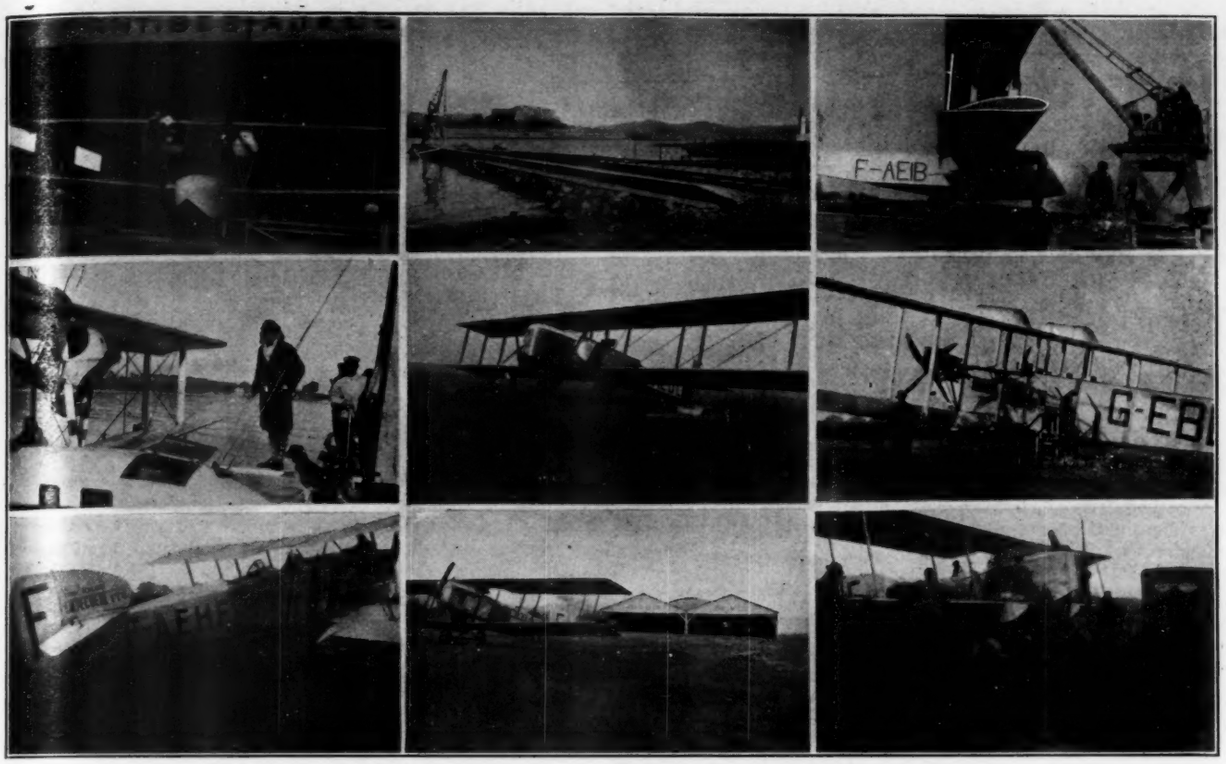
For example—it took the writer on one occasion four hours and fifteen minutes to fly in a Farman-Goliath from Brussels to Paris, having spent forty minutes in reaching the airdrome at Brussels from the city itself, and a good fifty minutes to motor from Le Bourget to the Paris hotel, and having in addition to that spent an odd twenty to thirty minutes waiting for the plane to get loaded and ready to fly. It actually took six hours and a quarter to travel from the heart of Brussels to the heart of Paris, whereas it would take about five hours by train. The reason, of course, was a head wind—a Southwesterly wind of about 20 m.p.h. One estimates that the Farman-Goliath cruises at 1400 r.p.m. at about 60 m.p.h. which gives an average cruising speed of about 40 m.p.h., which was the actual average of the trip.

Similarly, on another occasion, in flying from Paris to London on a Handley-Page W8, there was a decidedly stiff Northwest wind, and whereas this trip is generally advertised as taking two and a quarter hours or two and a half, the actual log of the trip was as follows: Left Crillon Hotel, Paris, at 11 o'clock in the morning. Left Le Bourget at 12.05, reaching the Channel at 1.50. Arrived at the English side at 2.25. Arrived at Croydon 3.45. Total time in air 3 hr. 40 min., which for a distance of 233 miles is a mean air speed of about 62 m.p.h. for the entire crossing. We finally arrived at the Hotel Victoria in London at about quarter of five, so that the entire voyage from Paris to London took 5 hr. 45 min. The express train service does the distance in seven hours. During the trip the cabin was very cold, particularly around the feet, and therefore uncomfortable. The drumming noise of the two motors was also distinctly uncomfortable so that while, of course, making the trip by air was interesting to do as a novelty, the actual rendering of a service was questionable.

Among other lines that were investigated and upon which trips were made was the Paris-Marseilles line of the *Compagnie des Messageries Aériennes*, which, due to the season of the year, was highly impractical; so much so, that before leaving Europe, one understood that the service had been temporarily suspended.

A Real Commercial Service

Some time was spent studying the Latécoère Line from Toulouse to Casablanca, after which one readily arrived at the conclusion that this was by far the most serious Air Line operated by the French, and was distinctly the beginning of an elaborate service. This line at the present time runs from Toulouse to Casablanca, and this coming spring it will be ex-



European Air Lines: Fig. 1—Aéronavale flying boat in its shed. Fig. 2—The slip way at Antibes, France. Fig. 3—How the flying boat is let into the water by means of a derrick. Fig. 4—Grover Loening standing on the deck of the Aéronavale flying boat before embarking for Corsica. Fig. 5—Farman "Goliath." Fig. 6—Handley Page W8. Fig. 7—The type of Bréguet which is the mainstay of the Latécoère Air Lines. Fig. 8—Farman F70 at Nice airport, France. Fig. 9—Latécoère air liner taking on mail for Morocco.

tended several hundred miles down the African Coast to Dakar, with the intention in 1924 of a further extension from Dakar to South America.

The night train from Paris arrives at Toulouse at about nine in the morning and the air mail for Africa is promptly transferred to a machine waiting on the line with motor running. Every effort is made in practically all kinds of weather to have the machines leave promptly on time. The first stop is Barcelona where another machine, all in readiness, is waiting for the transfer of mails and passengers. Barcelona is about 240 miles from Toulouse, and is incidentally a very attractive and hustling city. The next leg is from Bercelona to Alicante, in the South of Spain, a distance of about 300 miles and the next leg, about 320 miles, is to Malaga, and thence across the Straits of Gibraltar to Rabat and Casablanca in Africa. For the accomplishment of one round trip each day, the service uses thirty Breguet 14 tractor airplanes with 300 hp. Renault motors in which all the military installation has been replaced by cockpit for pilot and two passengers seated in tandem behind him, and in which the mail is carried in special streamlined containers that have been built on the underside of the lower wing out at the first strut on either side of the body.

Sound Economics

The record of the Latécoère Line, considering the distance traversed and the magnitude of operation, is very much in line with what has been accomplished by our own Air Mail Service. The most interesting point is that (since they are paid by the Government per kilogram of mail carried) due to the extra charge that the government permits for this air mail, which amounts to about 50 francs per kilogram of mail, and due to the fact that the planes average 100 kilograms mean load, there is an actual income of about 5000 francs per trip. During the month of November 3150 kilograms of load were carried.

The management of this line, therefore, foresees the time in the very near future where it will pay. The gradual growth of their business this year alone is shown by the fact that in January of 1922 only 460 kilograms were carried, whereas by the end of the year, over 3000 a month were being carried and the total for the year's operations was about 22,000 kilograms carried between France and Morocco by one machine a day, which at a payment of 50 francs per kilogram means a total gross income of 1,110,000 francs.

One gathers around Le Bourget that the Air Lines operating from there are merely trying to earn their subsidies, but around Toulouse one gets the impression that the Air Line is pretty seriously bent on getting the mail and passengers to Casablanca. Further, a real service is rendered by the latter Air Line because a trip is done in thirteen hours flying time which takes, on the average five to six days by other means, and incidentally, all of this is done with what the management itself considers very poor equipment and extremely expensive in maintenance, particularly as regards the motors.

A French Flying Boat Service

Another interesting Air Line is the flying boat service from Antibes to Ajaccio, Corsica. The distance is 250 kilometers across the Mediterranean in a region where the weather is in general very good for flying. The equipment at first consisted of single-engined flying boats, but starting this year the *Compagnie Aéronavale,* which operates the service, began using the twin-motored Lioré & Olivier type H13 flying boat, one of which was exhibited at the Paris Salon. As may be seen from the photographs, this is a biplane boat with a thick wing section, with the usual type of French flat bottom hull and powered by two 150 hp. Hispanos. The pilot sits aft with a visibility that is very poor for landing. The passengers are placed in a neat little four-seated compartment at the bow of the hull, which is very uncomfortably shut up and has a disagreeable vibration. In fact, on the particular machine on

which the flight was made, the vibration of the engines, both in themselves and with each other in synchronism, was considered quite serious, particularly as the bracing of the plane was by single streamline wires—one of the lift wires vibrating very badly. One learned a few days after having flown on this machine that there was a serious accident, which was probably due to this cause—a cause which certainly can be remedied as otherwise the machine in question is quite a good flying boat, with an excellent take-off and very comfortably stable in flight.

The flat bottom, of course, is disagreeable for landing in rough weather, but in general the design of the machine is original and creditable, and one regrets the accident greatly, particularly the loss of Desnoyelles, who was an excellent pilot. But just as the land-machine pilots in Europe think nothing of flying low over the water, so the seaplane pilots seem to fly without compunction over long necks of land (for instance, over the Rocky Coast of Corsica) in order to shorten their trip. With the marvelous opportunity that these water machines have of constantly being on their airway at a low altitude, one could not censure too much the habit of departing therefrom.

The handling of these flying boats at the station at Antibes was done entirely by derrick in a very neat and expeditious manner.

The Splendid Airport at Rotterdam

As far as the airdromes are concerned, while Le Bouget is impressive, the finest airdrome among those visited was that of Waalhaven at Rotterdam, which, under the able direction of Herr A. Plesman of the K.L.M., is decidedly a model. One was disappointed at Croydon, the layout of which is disconnected and in the main quite temporary, with some of the lines installed in old Bessonau hangars, but it was at this airdrome that the only real wireless installation was found in actual operation.

As far as the machines themselves go, one stands amazed at some of the overloaded types that are used; particularly the DH34 which appears just barely able to get out of the Croydon Field and skim over the trees, but which is not a bit worse than the Dornier, which visited Croydon, or the Junkers. Certainly, in the United States, where serious differences in altitude (crossing mountain ranges, etc.) would be encountered on an air line, these types of machines wou'd be impossible. In fact, one accident on a DH34 last year was due to a pilot crashing, in a thick fog, into a hill which he did not have "pep" enough to zoom over.

Certainly the conception of reserve power in commercial planes seems in Europe to be completely abandoned, excepting in the Farman Goliath, which has a healthy airworthiness, although the machine is slow. The chief reason for this tendency to over'oad seems to be a craze for economy of gasoline, but upon analyzing the actual figures of cost of operation, this does not seem to be justified.

Riding Qualities of Various Air Liners

A most interesting feature is the manner in which the various types of machines differ in their characteristics of riding qualities. The Handley-Page W8 is directionally unstable in a very distinct manner and weaves around from side to side in an amplitude that increases up to a certain point and then stops. The Farman-Goliath rolls a great deal laterally, and the Fokker F3 has the distinct characteristic of jumping up and down longitudinally in a sharp manner, while in contrast to the other types it is quite stable directionally and laterally. The net result is that the Fokker F3 is by far the most uncomfortable to ride in from the standpoint of tendency toward air-sickness, and the charactertistics of these types are so distinct that one could almost detect which type one was riding in blind-folded. Of course, due to the habit of low flying of the pilots, these characteristics are extremely evident. Of the airplanes mentioned, the Farman-Goliath seemed to be the most comfortable to ride in, largely because the one in question had engines and propellers that were beautifully balanced, with the result that there was very little vibration. In addition one can sit out in the bow and really see the country.

In closing, one cannot but pay tribute to the pilots and mechanics who manage to get so much flying under such dangerous conditions and with very poor weather; and particularly as their records show that if flying under these circumstances can be done with as small a percentage of accidents, a safe airway service may be considered a very practical proposition.

Experimental Multi-Engined Bombers

Bids for the design and the cost and time construction estimates for one and two Type XII Multi-Seater Short Distance Night Bombers were invited Nov. 23, 1922, by the Engineering Division, Air Service. The bids received will be opened Feb. 27.

Following are the general characteristics of this type of machine. The airplane shall be at least three-engined and the choice of engines is restricted to the Liberty XII and the W-1-A 700 hp. models. An effective silencer is desired. The machine shall be able to take off and fly, fully loaded, with one engine cut out. The type of construction must be all-metal, except that wings and fuselage may be fabric covered. The design shall be such as to insure ease of production and general maintenance, and quick installation of the power plant. The degree of stability shall be such as to require a minimum amount of attention on the part of the pilot. The type of construction shall permit of ready and convenient disassembly into such units as will permit shipment by rail on standard trunk lines. The safety of the crew in case of a crash shall receive careful consideration, and the placing of structural members in locations which might make egress difficult in that case shall be avoided.

The following performances with full load are required: Max. speed, ground level, 110 m.p.h.; service ceiling, 15,000 ft.; take-off run with full power over level ground and no wind shall not exceed 750 ft.

The machine shall carry fuel for 5 hr., 2615 lb. of armament (1800 to 2200 lb. of bombs and five Lewis guns), and 435 lb. of equipment, the latter including an allowance of 74 lb. for parachutes. The normal bomb loads are as follows: twenty 100 lb., or six 300 lb. or three 600 lb. or two 1100 lb. bombs. A special bomb load of six 600 lb. bombs may be carried by reducing fuel and other items.

Civil Service Examinations

Open competitive examinations are announced to fill various positions in the field branches of the Fourth Civil Service District, embracing the States of Maryland, North Carolina, Virginia, West Virginia and the District of Columbia.

Among the positions available there is one of Junior Aeronautical Engineer, $1500-$1800 per annum, examination March 3, 1923, Newport News, Va., Application Blank 2825.

Full information regarding this examination, together with a copy of the announcement and necessary application blank, may be secured by addressing the Secretary, U. S. Civil Service Board of Examiners, at any post office or customhouse in any of the cities where examinations are announced to be held.

Attention is directed to the fact that so-called Civil Service Correspondence Schools have no official status and no connection with the government. Authentic information in regard to examination may be obtained only from the U. S. Civil Service Commission, or an authorized representative of the Commission, and without cost.

Applications should be properly executed and promptly filed with the latter.

No More Deutsch Cup

The Aero Club of France announces that the Deutsch Cup, having been won twice by the Nieuport Co., has been finally awarded to that company, in accordance with the rules, and that this contest is now closed.

Operations of the Aerial Forest Patrol, 1922

Air Service Report Shows that Aerial Patrols Offer Unparalleled Means for Suppressing Forest Fires

During the past summer an aerial forest patrol was jointly operated by the Army Air Service and the Forest Service over the forests in Oregon, a State which possesses about one-fifth of the standing timber in the United States, and which leads all other states in the Union in this respect. The aerial patrols covered the Oregon, Santiam, Cascade, Sinskawn, Umpqa, Siskiyou and Crater National Forests as well as privately owned and State timber holdings, covering approximately 9,940,000 acres, and containing some 373,560,000 ft. of timber. As the value of the timber within this district amounts roughly to half a billion dollars, and the cost of the aerial patrol was about $52,000, it will be seen that the protection of this great wealth against the ravages of fire was accomplished at the insignificant cost to the government of about 10 cents for every $1,000 worth of standing timber. A cheaper form of insurance can hardly be conceived.

What the Cost of the Aerial Patrol Amounts to

A report by Lt. Col. W. E. Gillmore, A.S., Air Officer of the 9th Corps Area, dealing with last season's aerial forest patrol operations, gives some interesting information on this little known branch of national air activities.

The sum of $52,000 which the government expended for the maintenance of the aerial forest fire patrol represents just a little more than twice the damage caused by one fire during the past summer in California, a State that had the benefit of aerial forest fire patrol for only a brief period. There was an understanding between the Commanding General of the 9th Corps Area and the Forest Service, whereby the Air Service would furnish assistance in California in cases of extreme emergency only, when individual planes equipped with radio would be sent out over especially serious fires for reconnaissance flights. Local forest officers of the California National Forest believe that the Grindstone Fire, which occurred on Sept. 11, and which started in a blind area, not visible to regular lookouts on the forest, would have been discovered in its incipiency if the air patrol had been in effect. This fire, the largest in California for ten years, covered approximately 40,000 acres and cost $23,000 to suppress.

The significance of aerial forest fire patrol is very real to those States which have experienced its benefits. These States know from actual experience that the fire-fighting airplane is an agency by means of which the virtual sacrifice of vast stands of timber, together with the drastic financial losses resulting therefrom, may be averted.

In view of the economy program outlined by the War Department, calling for a reduction of airplanes, personnel and equipment, it was first believed that no air patrol could be provided. The Air Service in the 9th Corps Area had been reduced from six squadrons, approximating 40 officers and 630 enlisted men, to but one squadron, the 91st (Observaton), comprising 12 officers and 160 enlisted men, assigned and attached. Upon this organization and the personnel available at Mather Field, Mills, Calif., consisting of approximately 13 officers and 60 enlisted men, devolved the responsibility of executing a program which called for Air Service cooperation at 13 summer training camps, extending over a period from June 15 to Aug. 27, and necessitating a distribution of Air Service personnel from Camp Lewis, Wash., in the north, to the Presidio of Monterey in the South, and extending as far east as Salt Lake City, Utah. This was in addition to cooperation with the Coast Defenses of San Francisco and the conduct of the necessary routine duties.

Later in the season, however, when Oregon again found herself confronted with a difficult fire situation, she made such urgent and insistent requests for the resumption of aerial patrol that the War Department finally decided to grant her request. Obviously, with only the above limited personnel available, it meant that such patrol would necessarily have to be operated on a much smaller scale than had been the case during the past three years. Accordingly, cooperation with the Forest Service in fighting fires was confined almost entirely to Western Oregon.

Last Summer's Organization

The aerial patrol in Oregon was conducted by a detachment of 4 officers and 25 enlisted men of the 91st Squadron, and two officers from Mather Field. Five officers and eight enlisted men of this detachment arrived via airplane at the Municipal Landing Field at Eugene, Ore., the headquarters, on the morning of July 15, about 24 hr. after authority for patrols had been received. The remainder of the detachment, accompanying a motor convoy of nine vehicles, arrived in Eugene on July 20. The radio station immediately installed at Roseburg, Ore., was discontinued several days later, as, with the method of patrol inaugurated, the use of radio was not considered of sufficient importance to warrant its operation. Landing fields were maintained at Medford, Roseburg, Salem and Portland, but no sub-bases were established. Patrols were begun out of Eugene on July 17, and were continued until Sept. 26. Patrol operations were officially closed on Oct. 3 and all Air Service personnel engaged on this work returned to their home station by Oct. 6.

The system of patrols used this year marked a radical departure from the organized patrols operated during the last three years. Formerly, patrols were flown daily (weather permitting) at regular intervals over certain designated patrol routes, between definitely established bases and sub-bases. The observers at that time were either civilians (most of them Air Service Reserve Officers) employed by the Forest Service, or Air Service enlisted men who had been trained especially for this work. Radio, the chief means of communication, was an absolutely indispensable feature of this system, and was developed to a valuable and important degree.

Under the system inaugurated for this year, however, instead of flying over the regular patrol routes, planes were held at Eugene, Ore., subject to the call of Forestry officials, and were used at different times for scouting purposes during unusually hazardous fire periods, for reconnaissance flights, etc. State District Wardens and Forest Supervisors acted as observers on trips made over their particular districts. Planes were also made subject to call by Federal, State and private forest protective agencies, and all arrangements for flights were made with Capt. Lowell H. Smith, Commanding Officer of the Air Service Detachment.

With forestry officials acting as observers, the employment of trained observers for patrol duty was obviated. These officials were, of course, thoroughly familiar with the territory flown over, and were able to locate fires within their districts at an estimated average accuracy of 95 per cent, which meant that most of the fires discovered were placed within one-quarter of a mile of their actual location. Moreover, under this plan, the forester himself obtained the necessary information concerning the location and status of a fire which would, under the former method of patrols, have been communicated to him by radio through a Forestry Liaison Officer.

Overcoming Prejudice

Although the value of aerial patrol was evident to forest administrative officials from the first, there appeared to be an attitude of criticism against, if not actual opposition to, this activity on the part of many field forestry officials, due in part to objections, which, as a rule, follow in the wake of innovations along any line of accomplishment—the tendency to cling with jealous tenacity to the old established order of things. This spirit naturally fostered indifference to the aerial patrol, many questioning its value, and making derogatory reports on the results accomplished. This was due more than anything else to the lack of familiarity of a large number of the forestry field force as to the actual value of

Forest Fire Photographed from an Army Airplane

the work and the results accomplished thereby. Moreover, a great many of these men had no opportunity of personally testing the efficacy of the fire-fighting airplane, nor had they ever come in personal contact with the Air Service personnel engaged in the work of fire protection.

This year approximately 75 District Fire Wardens, Forest Supervisors and other Forestry officials from all over Western Oregon made patrol flights. As a result of this personal patrol experience, the negative, or apathetic, attitude toward aerial patrol has been completely overcome, as attested to by the expressions of appreciation of the value of this work from many of the men who had been most skeptical as to its worth. Furthermore, among those foresters who championed aerial patrol from the first, appreciation of this activity was strengthened as a result of the satisfaction they experienced in being able personally to observe fires, for the checking of which they were responsible. They thus obtained in the most direct way possible invaluable information as to slopes, underbrush, direction of winds, and proximity of valuable timber to the fire zone, and were able, immediately upon landing, to intelligently organize their fire-fighting force in such a way as to provide for the most effective and expeditious suppressive measures. The possibility of incorrect reports by lookouts and fire wardens was also greatly lessened, since it was never known when a Forest Supervisor might make a flight over the territory about which fire reports had been received, at which time such reports could be either verified or disapproved.

The aerial patrols as conducted during the past season were not only economical from a financial standpoint but also tended to conserve the physical and nervous energies of the personnel actively engaged in this work. When a pilot is assigned to a definite patrol, averaging a duration of from two to three hours over the most difficult kind of terrain—a patrol which he must fly every other day, weather permitting, for approximately 2½ months, it means a tremendous tax on his physical and nervous forces. This year the pilots were called upon to fly only when it was absolutely necessary, which meant that during the season there were occasional intervals of from two to three days at a time when, due to slight fire hazard, no flying was required. The relaxation thus provided by these rest periods greatly reduced the physical and nervous strain of patrol flying.

It must be borne in mind that the conditions surrounding the forest patrol activities are probably unlike anything else in the United States. Owing to the extremely hazardous nature of the work, the highest class of flying and mechanical personnel is indispensable. Ninety per cent of the flying is done over rough mountainous country, the character of which means certain loss of the airplane and probable loss of life in case of forced landings. Most of the forested areas are of this nature, and it is a difficult thing for a pilot to fly from one to three hours and never be within gliding distance of a landing place.

From the standpoint of the Air Service, the system of patrols used during the past season compares unfavorably with the patrols of other years, in that it minimized the importance of radio communication. The practical use of radio and the extent to which it was developed constituted one of the most valuable features of the original plan of aerial patrol and provided training of the utmost importance to Air Service personnel. While the use of radio as a means of fire communication was negligible the past season, the Air Service personnel at Eugene made excellent use of their radio facilities in another way. By means of an SCR 73 set, installed on a radio operating truck, regular radio concerts and lectures

on fire prevention were broadcasted from Eugene three times a week, and were picked up by hundreds of amateur radio operators throughout the North and Northwest, and were also given considerable publicity in the local press.

In the opinion of Colonel Gillmore future systems of aerial patrol should include as a necessary part of operations the practical use of radio and its development to the greatest possible degree. In summarizing a comparison of the two methods of patrol, he believes that, considering the limited personnel and equipment available, the system of patrols used during the past season was more effective than a regular patrol would have been under similar circumstances.

Some Operation Data

Going briefly into the actual accomplishments of the Air Service detachment while engaged on this forest fire patrol work, we find first of all that there were no fatalities among the personnel, nor were any injuries sustained in the total number of 294 patrols flown. The total area observed was about 2,153,370 square miles; the total number of miles flown, 36,121, and the actual flying time 361 hr. 50 min. A total of 458 fires were discovered, of which number it is estimated that approximately 114 fires were discovered first by airplane. Fires were located with an average accuracy of 95 per cent. The average number of officers on duty was 9; the average number of enlisted men, 28, and the average number of airplanes in commission, 10. There were no forced landings, but three planes were crashed, all of them while about to make landings, one wreck being due principally to dry rot in the landing gear, one blowing a tire which resulted in a broken axle, and one breaking a wheel which caused the plane to nose over and break the propeller.

The following itemized statement shows the cost of the aerial patrol during the past season:

Airplanes and Engines:	
Depreciation of eight airplanes and motors based on approximately 400 hr. flying time	$15,000.00
Complete destruction of two airplanes	20,000.00
Complete destruction of one motor	5,000.00
Overhaul of five motors	1,250.00
Motor transportation:	
Depreciation of 3 automobiles	450.00
Depreciation of 5 trucks	550.00
Rail transportation:	
Eleven enlisted men from Eugene, Ore., to Crissy Field, San Francisco, Calif., at $24.00 each	264.00
Commutation of rations:	
Twenty-five men on commutation for 82 days at $1.98 per day	3,997.50
Gasoline and Oil:	
Aviation gasoline	3,600.00
Aviation oil	900.00
Motor transport gas and oil	410.00
Express shipments	216.00
Radio equipment and maintenance of motor transportation	50.00
Total	$51,687.50

With regard to the aerial patrol over California, alluded to before, patrols were flown out of Montague, Calif., over Siskiyou and Modoc National Forests, where electrical disturbances and incendiary fires necessitated especially stringent suppressive measures. With two Air Service officers as pilots, and with foresters as observers, one patrol a day was flown over this territory for approximately two weeks, beginning Aug. 17. On only one other occasion did the California Forest Service request the assistance of the Air Service, this being in connection with a very serious fire in the Santa Barbara National Forest. Two officers from Rockwell Field, San Diego, Calif., flew patrols over this forest for one week.

The following excerpts, taken from the report, are given to demonstrate the urgency of an aerial patrol over our National Forests during the period of the year when extreme fire hazards exist:

"One of the reasons why aerial patrol has proved of such great value to the Forest Service lies in the fact that it provides an unparalleled means for the discovery of fires. The aerial observer by the very reason of his position, is not only able to discover in their incipiency fires in the open country, but is also able to detect in obscure places small fires which, due to their location, could not possibly be visible to the ground lookout until they had reached sufficient proportions to represent a genuine menace. When a lookout's territory becomes obscured by a smoke screen, his value as a fire detection agency is either nullified altogether or rendered negligible. For instance, this season an aerial observer discovered within four miles of a lookout a 400-acre fire, which had been burning for at least two days, but which, due to smoky atmospheric conditions, had been entirely invisible to the lookout on the mountain top.

"When a fire has gained sufficient headway to necessitate the organization of a fire-fighting force for its suppression, the use of the airplane for reconnaissance purposes is invaluable. A proof of the more effective fire suppression, resulting from the intelligent and comprehensive view of fire situations made possible by the reconnaissance airplane, is established by the fact that, although there were only 24 more fires in Oregon in the three years preceding aerial fire patrol than in the three subsequent years, the territory burned over was reduced from 459,412 acres to 166,137 acres, or by 62 per cent. In California for the same periods there was a reduction of 27 per cent in territory burned over, the acreage having been cut down from 763,391 to 562,315.

Psychological Effect of the Air Patrol

"The psychological or moral value of air patrol on those persons (campers, tourists, hunters, fishermen, stockmen, etc.) whose carelessness or wilfulness in disregarding laws is responsible for such a large number of fires, is shown in the reduction of the number of fires resulting from lumbering and brush-burning. With special patrols that hover around a new fire soon after it starts, to investigate the probable cause, it shows conclusively to the general public that Uncle Sam has his eyes open, and the effect is beneficial. In one district three convictions were secured as a result of information obtained by the District Warden while on patrol. It is the amazing reduction in the number of incendiary fires which proves the morally prohibitive effect of airplane patrol. The number of fires in California resulting from this cause has been reduced from 556 during the years 1916 to 1919, inclusive, to 187 for 1919 to 1921, inclusive. In Oregon, for the same period, the number has been lowered from 599 to 185, making an average reduction for these two States of 70 per cent in the number of incendiary fires since aerial patrol has been in operation. The almost total absence of aerial patrol in California for the past year was, in the opinion of the California Forester, responsible for an increase of 23 per cent in the number of incendiary fires in that State during 1922 over the number in 1921.

"Insofar as the Air Service is concerned, the chief value of aerial patrol lies in the training it affords Air Service personnel. In the performance of this work, the essential characteristics of which closely simulate war-time requirements, peace-time training of the very highest order is provided for the personnel of an Observation Squadron. Pilots and enlisted men equally share in the benefits of this training; for the mechanics who are responsible for the maintenance of airplanes know that there is no more hazardous flying performed anywhere in the United States in the line of duty than on aerial forest patrol. Each one realized, therefore, that his work must be performed with the utmost conscientiousness and thoroughness if the element of danger in flying over forested areas is to be reduced to the minimum. Further, the realization that, in conducting aerial patrol they are rendering a practical service of great benefit to the country at large, stimulates the morale of the personnel assigned to this duty, and is responsible for the success of patrol activities, notwithstanding serious handicaps such as this year's extreme shortage of personnel. The training the 91st Squadron received in the aerial forest fire patrol has surpassed anything that could have been accomplished in school or garrison duties, and in any national emergency this training would prove of inestimable value."

The average person's mind cannot conceive a million acres, or a million board feet of lumber or even a million dollars. But anyone who can conceive a careless camp fire in the woods, or a careless cigarette stub thrown away, and then takes an airplane ride over one of those tornadoes of flame and smoke, politely called a "forest fire," taking everything before it, including thousands of acres of fine standing timber, sometimes human life, darkening the sun by day and lighting the whole country at night, and then realize that all this could have been averted by a single airplane flight of two men, at no great expense, he can be readily converted to the value of forest patrol. A person never seeing a large forest fire, which has burned for weeks and gotten under real headway, cannot have an idea as to their real character or the damage they cause. All big fires were originally small and preventable. It is no idle boast that if the entire airplane patrol of 1922, or any other year, was instrumental in preventing one *single large fire,* it would reimburse the nation for the aggregate cost of all forest patrol since 1919 out of the money saved in timber conservation. The tragedy lies in the fact that the public cannot be educated up to the point of demanding annual forest patrol over the Western States.

Recommendations for the Future

In concluding his report Colonel Gillmore makes the following recommendations:

(a) That radio sets with a sending radius of 150 miles be perfected for use on patrol work in connection with local control stations, all airplanes sending in their locations at intervals while on flights—this as a means of giving added training to all personnel.

(b) That request be made on the U. S. Forestry Service for a large scale map showing the natural characteristics, with accurate indication and designation of forest areas; this map to be suitable for photographing and mounting on aluminum plates for practical flying work.

(c) That the new system of special patrols now in use be continued, but that it be augmented by a definite training schedule for enlisted men as aerial observers in observation, radio and gunnery, and by so doing increase the military value of the patrol. The only factors involved by this training would be the additional personnel, additional allowance of flying pay for enlisted men, and additional equipment, which is already available.

(d) That provision be made for a permanent forest patrol personnel, outside of the troops needed at Crissy Field and elsewhere in the 9th Corps Area, of 125 men, to be stationed as follows: Eugene, Ore., 65 men; Medford, Ore., 30 men; Camp Lewis, Wash., 20 men, and Northern California, 10 men. These details would allow for ample radio control stations and radio communication between San Francisco and Camp Lewis.

(e) That steel hangars be erected at the three stations mentioned above for housing government airplanes and equipment.

(f) That due to the hazardous nature of the work and the extreme importance of first class airplane maintenance and condition, the personnel should be especially selected for this duty and should possess the highest flying and mechanical qualifications.

(g) That steps be taken by the War Department, if possible, to authorize forest patrols yearly in sufficient time to permit of proper preparations therefor. During every season in the past, forest patrol operations were handicapped by circumstances resulting from too much haste in preparation, due to the fact that patrols were always authorized at the last minute and arrangements were made at the last minute. By establishing yearly patrols, plans could be made in plenty of time and a high state of efficiency reached.

Statax Three-Cylinder Rotary Engine

An interesting powerplant on account of its possible use in "auxiliary" sailplanes has just been produced in Germany. This is the "Statax" three-cylinder rotary two-stroke engine, which has been designed and built by F. J. M. Hansen. It is stated to weigh but 17.6 lb. complete with propeller, while the power is claimed to be 7.5 hp.

The chief feature of the "Statax" is that there is no crankcase but merely a cylindrical induction chamber to which the cylinders are bolted, with their closed ends turned inward. The outer ends of the cylinders are open, and the pistons have their skirts pointing outward. It is claimed that the extremely light weight is a result of so designing the engine that all the most highly stressed members work in tension. From the very brief particulars available (from *Flugsport* of Nov. 15, 1922), it is not quite clear how the force of the explosions and centrifugal force is transmitted from the flat steel straps to the connecting rods or their equivalent. It would appear that, instead of connecting rods, the skirt of the pistons is extended outward, the two extensions carrying lugs for the steel straps coming out from the boss which represents the crank-pin. These steel straps are bent over the lugs and then twisted so as to be brought edge-on to the air as the engine is turning.

There are no valves, induction and exhaust ports of usual type, closed and opened by the pistons, being used instead. The combustion chamber is at the inner end of the cylinders, and the mixture is transferred to the combustion chamber through bent induction pipes. Centrifugal force is relied upon to get the charge from the induction chamber out to the cylinders.

The cylinders are of steel, machined from forgings, and are provided with fins of the usual type. The pistons are made of aluminum alloy, as is also the induction chamber, which, owing to the tie-rods by which the cylinders are held down, does not have any great centrifugal force to resist. Also, instead of the explosion pressure being added to that of centrifugal force on the cylinders, as it does in ordinary rotaries, it acts in oppositon to centrifugal force.

The propeller blades of which there are three, are bolted to the induction chamber in the spaces between the cylinders. It would, for this reason, appear to be impossible to cowl-in the engine and as the combustion chambers are near the foot of the cylinders, probably this portion will require ample cooling, so that a cowl could not be used in any case.

The magneto fitted is a Bosch of the smallest type, and the plugs are Bosch-Gnome-Lilliput. The magneto is mounted on the back of the engine as is also the oil pump.

The engine is started by injecting a few drops of fuel through the exhaust ports, when, on swinging the propeller the engine usually starts after one-half turn. Owing to the centrifugal induction system it has been found that the engine will not function with any regularity at speeds below 500 r.p.m. The maximum revs. (for long periods) is 1,600 r.p.m. At that speed it may be assumed that the propeller efficiency will not be very good in a slow machine.

Following are the main dimensions, etc., of the Statax: Bore 60 mm. (2 in.); stroke, 70 mm. (2¾ in.); speed, 1,600 r.p.m.; fuel consumption, 0.705 lb./hp./hr.; oil consumption, 0.07 lb./hp./hr.; total weight, including a propeller of 4 ft. 11 in. diameter, 17.6 lb. These figures, it is stated, are guaranteed.

Central American Aircraft Limitation

The Convention for the Limitation of Armaments which the Republics of Guatemala, El Salvador, Honduras, Nicaragua and Costa Rica signed at Washington, D. C., on Feb. 9, contains a clause providing for the limitation of military aircraft. This clause (Art. IV, par. 1) reads as follows.

"None of the Contracting Parties shall have the right to possess more than ten war aircraft."

The second paragraph of this article states however:

"The following cases shall be considered as exception to this article: civil war or threatened attack by a foreign state; in such cases the right of defence shall have no other limitations than those established by existing Treaties."

"Who's Who in American Aeronautics"

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The biographical sketches of men who are prominent in American Aeronautics are printed periodically in AVIATION. The first series have been published in a more durable form, and revised issues will be published from time to time to take care of the frequent changes in station of Army and Navy officers, and such other changes as may occur. As errors and omissions are liable to occur in a compilation of this character, interested parties are requested to notify "Who's Who" Editor of the necessary corrections so the record may be kept up to date.

John Bernard Coleman

COLEMAN, JOHN BERNARD, Broker; born, Chicago, Ill., Jan. 20, 1890; son of Bernard Coleman and Catherine Agnes (Earley) Coleman; married, Eva Consuela Lennon, Feb. 18, 1919.
Educated: Public schools and High schools of Chicago, Ill. and Chippewa Falls, Wis.; Champion College, Prairie du Chien; St. Louis University, LLB.
Professional: Graduated law school, June 1913; located in brokerage business in Chicago to Jan. 1915; moved to Sioux City, Ia. representing Shackleford French Co. as branch office manager to June 1916; owner and manager of John B. Coleman & Co. to date.
Aeronautical Activities: Enlisted in Air Service, Dec. 16, 1917; completed University of Illinois Ground School, July 1918; Camp Dick, Dallas, Tex., Aug. 1918; Fort Sill, Okla., Sept. 1918; Post Field as Aerial Observer; left service Dec. 20, 1918; organized and President of the Aero Club of Sioux City; governor of the 7th Corps Area at Omaha Aero Congress in 1921; served on Advance Executive Committee of the National Aeronautic Association in Detroit, 1922.
Flying Rating: Aerial Observer.
War Service: Air Service Signal Corps, Jan. 16, 1918 to Dec. 20, 1918.
Member: Aero Club of Sioux City; National Aeronautic Association.
Present Occupation: Manager, John B. Coleman & Co.
Address: 305 Metropolitan Bldg., Sioux City, Ia.; home, 2617 Virginia St., Sioux City, Ia.

Ennis Clement Whitehead

WHITEHEAD, ENNIS CLEMENT, 1st Lieut. Air Service; born, Westphalio, Kans., Sept. 3, 1895; son of J. E. Whitehead and Celia (Dodd) Whitehead; married, Mary Morse Nicholson, Sept. 25, 1920.
Educated: University of Kansas, A.B. 1920.
Professional: Journalism, Feb. 1920 to Sept. 1920.
Aeronautical Activities: Ground School, June 24, 1917; primary flying school, Aug. 4, 1917; advanced pursuit training Issoudun, France, Feb. 14, 1918; instructor from Feb. 1918 to May 1918; test pilot to Nov. 1918; returned to U. S. Dec. 1918 and discharged Jan. 1919; re-entered, Sept. 1920; instructor, March Field, Feb. 1921; ordered 1st Pursuit Group, Kelly Field, Feb. 1921; on detached service at Langley Field, Project B, May 1921 to Nov. 1921; Selfridge Field, 1st Pursuit Group, June 1922; participant in Pulitzer Trophy Race, 1922.
Flying Rating: Airplane Pilot; Reserve Military Aviator, Oct. 19, 1917.
War Service: U. S. Air Service, May 10, 1917 to Jan. 10, 1919.
Present Occupation: 1st. Lieut., U. S. Army.
Address: Selfridge Field, Mt. Clemens, Mich.

Adrian Van Muffling

VAN MUFFLING, ADRIAN, Aeronautical Engineer; born, Helmond, Holland, Sept. 4, 1886; son of Otto Van Muffling and Corry (Van Helmond) Van Muffling.
Educated: Public schools of Rome, Italy; Technology School, Rome, Italy; Weimar College, Germany; Columbia University, New York.
Professional: Became interested in aeronautics in 1908; lecturer on aeronautics; established as Consulting Engineer, 1912; connected at various times with International Motor Co., Boyd Motors Co., Aircraft Engineering Co., and Ordnance Engineering Co.; was Chief Instructor, Y. M. C. A. Airplane School during the war; in Aeronautical Dept., College of City of New York, 1917-1920; Van Muffling and Marx, 1920-1922.
Books Written: "Radio Reception" (in collaboration with H. I. Marx); Textbook for Aeroplane Mechanics.
Member: Society of Automotive Engineers; Royal Institute of Engineers; National Institute of Inventors; Board of Governors, Aeronautical Chamber of Commerce.
Address: 149 Harmon Ave., Pelham, N. Y.

Bion Joseph Arnold

ARNOLD, BION JOSEPH, Consulting Engineer; born, Casenovia, Mich., Aug. 14, 1861; son of Joseph Arnold and Geraldine (Reynolds) Arnold; married, Stella Barry, Jan. 14, 1886, d., Feb. 1907; Margaret Latimer Fonda, Dec. 22, 1909.
Educated: Public schools of Ashland, Neb.; University of Nebraska, 1879-1880; Hillsdale College, B.S., 1884, M.S., 1887, Master of Ph., 1889; post graduate work in Electrical Engineering, Cornell University, 1888-1889; degree of Electrical Engineer, 1897 and Dr. Engineering, 1911 from University of Nebraska; Armour Institute, D.Sc., 1907.
Professional: General Agent and travelling expert, Advance Thresher Co., and Upton Mfg. Co., 1884-1886; draftaman, E. P. Allis Co. and chief designer. Iowa Iron Works, 1886-1887; with Chicago Great Western Ry., 1887-1892; consulting engineer, Chicago office, 1892-1893; invented magnetic clutch, storage battery improvements, new system and devices for electric railways; first to recognize and put into practice automatically controlled substations for electric railways.
Aeronautical Activities: Commissioned Major in Engineer Officers Reserve Corps, Jan. 23, 1917; promoted to Lieut. Colonel, Dec. 14, 1917; was detailed to work with Rear Admiral D. W. Taylor on engineering work in connection with aircraft production for the Navy, Mar., 1918; assisted Major Gen. Wm. L. Kenly on important development work; honorably discharged, Feb. 6, 1919; commissioned Colonel, O.R.C., Sept. 13, 1919.
War Service: Commissioned Major, Engineer Officers' Reserve Corps, Jan. 23, 1917; Lieut. Col., Signal Corps, U.S.A., Dec. 14, 1917; in active service in connection with Bureau of Aircraft Production and Dept. of Military Aeronautics until Honorably discharged, Feb. 6, 1919.
Books: Reports on traction and engineering matters.
Member: Engineers Club; The Chicago Club; Union League; Naval Consulting Board of the U. S.; American Institute of Electrical Engineers; American Society of Civil Engineers; American Society of Mechanical Engineers; Society of Automotive Engineers; Inventors Guild; Pres., Air Board of Chicago; National Aeronautic Association.
Present Occupation: President, The Arnold Co.; President, Elgin & Belvidere Electric Co.
Address: 105 So. La Salle St., Chicago, Ill.; home, 4713 Kimbark Ave., Chicago, Ill.

Herbert Von Thaden

THADEN, HERBERT VON, Aeronautical Engineer; born, Chicago, Ill., Feb. 21, 1898; son of Otto Von Thaden and Hattie (Mueller) Von Thaden.
Educated: Public schools of Cincinnati, Ohio; Ohio Mechanics Institute; University of Cincinnati, 1916-1917; Mass. Inst. of Tech., B.S. (M.E.) 1921; Imperial College of Science, London, Eng., 1921-1922.
Professional: Engineering work at the American Tool Works, 1916; laboratory assistant, National Advisory Committee, 1920; technical assistant, Air Ministry, London, Eng., 1922; aeronautical engineer, Aircraft Development Corp., 1922 to date.
Aeronautical Activities: Started flying at Celina, Ohio, 1916; Air Service U. S. A., 1917-1919; experimental flying and laboratory work at National Advisory Committee, 1920; studied aeronautical methods in Germany, France and England, 1922; rigid airship design, 1922 to date.
Flying Rating: Reserve Military Aviator, 1918; American Expert Aviator's Certificate No. 219.
War Service: Enlisted May 19, 1917; commissioned 2nd Lieut. A.S.O.R.C., July 1918; promoted to 1st Lieut. Jan. 4, 1923.
Member: Society of Automotive Engineers; National Aeronautic Association.
Present Occupation: Aeronautical Engineer, Aircraft Development Corp
Address: General Motors Bldg., Detroit, Mich.; home, 633 Lothrop Ave., Detroit, Mich.

Ford Ashman Carpenter

CARPENTER, FORD ASHMAN, Consulting Meteorologist; born, Chicago, Ill., March 25, 1868; son of Lebbeaus Ross Carpenter and Charlotte (Baldwin Eaton) Carpenter; married, Edith Atherton, July 12, 1894.
Educated: Chicago High Schools; Dilworth Academy; Carlson Astronomy Observatory; Whittier College, LL.D., 1913; Occidental College, Sc.D., 1921.
Professional: U. S. Weather Bureau forecaster and meteorologist, 1888- 1919; lecturer on meteorology and aeronautics, University of California, 1914-1916; manager, Dept. Meteorology and Aeronautics, Los Angeles Chamber of Commerce, 1919 to date.
Aeronautical Activities: Observer for Curtiss Company, 1911-1912; lecturer, aeronautic meteorology, U. S. Army Aviation School, San Diego, 1915; Monterey Military Encampment, U. S. Army, 1916; Rockwell Field, March Field, Ross Field to 1922; Meteorological observer, aerial bombing off Virginia Capes, 1921; lecturer, Air Service, War Dept., Langley Field, 1921.
Flying Rating: F. A. I. pilot's certificate No. 913, 1921; Spherical Balloon Pilot.
War Service: Signal Corps, U. S. Army, 1888-1891; Major, Staff Specialist, Branch Assignment Group, Officers Reserve Corps, U. S. A., 1922; Lieut. U.S.N.R.F., 1921-1922.
Books: "Aviator and Weather Bureau", 1917; "Solo Flight in Spherical Balloon", 1921; numerous monographs, pamphlets, etc. on climate, weather and aeronautics.
Member: Fellow, Royal Meteorological Society (London); American Society of Civil Engineers; Southern California Academy of Science; American Meteorological Society.
Present Occupation: Manager, Dept. Meteorology and Aeronautics, Los Angeles Chamber of Commerce.
Address: 800 Central Building, Los Angeles, Calif.; home, 120 So. Manhattan Place, Los Angeles, Calif.

Charles Sherman Jones

JONES, CHARLES (CASEY) SHERMAN, Commercial Aviator; born, Castleton, Vt., Jan. 11, 1894; son of John Jones and Helen (Sherman) Jones; married, Marguerite Williams, Oct. 1917.
Educated: Public schools of Castleton, Vt.; Rutland High School, 1911; Middleburg College, Vt., A.B., 1915.
Professional: Physical Director, Montclair Academy, N. J.
Aeronautical Activities: Learned to fly at Dayton, Ohio, 1917; Pursuit School, Issoudon, France, Dec. 1917 to July 1918; 1st Lieut. U. S. Air Service, Oct. 1917 to Jan. 1919; manager, Curtiss Aeroplane & Motor Corp., 1919 to date.
War Service: Escadrille Spad 95 (French Air Service).
Member: Aero Club of America.
Present Occupation: Manager, Curtiss Exhibition Co.
Address: Garden City, L. I.; home, 127 Roxbury Rd., Garden City, L. I., N. Y.

Percy F. Lewis

LEWIS, PERCY, F., Insurance; born, Chicago, Ill., Aug. 1, 1896; son of Geo. R. Lewis and Effie (Tyce) Lewis.
Educated: Public schools of Milwaukee, Wis.; University of Wisconsin.
Professional: Special Agent, Boston Insurance Co., 1920 to date.
Aeronautical Activities: On duty at Pensacola, Fla., Akron, Ohio and Rockaway Beach, L. I. until discharged; served as Chairman, Gas Committee and Pilots Air Committee during National Balloon Race at Milwaukee, May 1922.
Flying Rating: Naval Aviators Certificate No. 1474.
War Service: U. S. Navy, March 4, 1918; U.S.N.R.F., April 14, 1919.
Member: Aero Club of Wisconsin.
Present Occupation: Special Agent, Boston Insurance Co.
Address: 405 Mitchell Bldg., Milwaukee, Wis.; home, 754 Hackett Ave., Milwaukee, Wis.

Spanish Aerial Activities

The Hispano-Suiza Automobile Co. has erected a special factory at Guadalajara, Spain, within the past year for the manufacture of airplanes. Planes have been constructed along the lines of certain Handley-Page models, under the supervision of a British advisor, who was recently replaced by aeronautic advisers and technical experts of the Spanish Army. About sixty planes have been built for the Spanish Army up to date and orders on hand call for thirty new ones and fifteen replacement planes. These airplanes measure 55.7 ft. from tip to tip and use 300 hp. Hispano-Suiza motors, built in Paris at the factory of that name. Spanish material is being used in nearly all parts of these airplanes, which sell for about 35,000 pesetas.

Authorization for the purchase of large quantities of aeronautic equipment by the Spanish Government was granted on Nov. 20. The specifications called particularly for spare parts for the Bristol, the DeHaviland, and various French planes. Airdrome equipment is also to be purchased, including installations at Cuatro Vientos, Getafe, Los Alcazares, Leon, Granada, and several airdromes in Africa. Two Bréguet airplanes, with ambulance equipment, were ordered by a separate decree. Apparatus for airplane photography was also purchased from a German firm, one set at a cost of 50,000 pesetas and another at 67,000 pesetas.

It is reported that there is still a considerable sum to be spent from the appropriations in order to prevent the money from reverting to the treasury, which is considered undesirable.—*Commerce Reports.*

England to India Air Mail

The establishment of an airmail service from England to India is under discussion in both countries and has been favorably reported by a Parliamentary air committee organized to study the problem. It is planned to establish a daily service between the two countries, each plane to carry 12,500 letters.

Under present conditions flying will be performed only in the daytime, and the schedule will cover five days from the date of departure to date of arrival. If night flying becomes practicable over any part of the route, this schedule will be reduced materially, as it is estimated that the trip could be made in two and one-half days if day and night flights were possible the entire distance.

The route selected is London, Cairo, Bagdad, Karachi, Calcutta, with a branch from Karachi to Bombay. The cost of the daily service is placed at about $5,000,000 annually. In addition to the ordinary postage, each letter will carry a surtax of 25 cents.—*Commerce Reports.*

Aeronautical Patents

Granted by U. S. Patent Office Feb. 13, 1923

1,444,886 Speed Indicator for Aeroplanes. Edward W. Rounds, Washington, D. C.

1,444,926 Landing Attachment for Aeroplanes. William E. Lawn, Rochester, N. Y.

1,444,959 Composite Propeller and Method of Making the Same. Daniel Adam Dickey, Wilkinsburg, Pa., assignor to Westinghouse Electric & Mfg. Co., a corporation of Pennsylvania.

1,445,128 Flying Machine, William Louis Buswell, Amarillo, Tex.

1,445,135 Fighting Airplane. William L. Gilmore, Roosevelt, N. Y., assignor, by mesne assignments, to Curtiss Aeroplane & Motor Corp., Buffalo, N. Y., a Corporation of New York.

1,445,142 Propeller Mounting. Charles B. Kirkham, Garden City, N. Y., assignor to Curtiss Aeroplane & Motor Corp., a Corporation of New York.

1,445,293 Aerial Craft. Everard Richard Calthrop, London, England, assignor to E. R. Calthrop's Aerial Patents, Ltd., London, England, a Company of the United Kingdom of Great Britain.

1,445,424 Airship and the Like. Ralph H. Upson, Akron, Ohio, assignor to The Goodyear Tire & Rubber Co., Akron, Ohio.

1,445,454 Construction of Wings and Like Parts of Aeroplane Flying Machines and Other Aircraft. Hugh Oswald Short, Rochester, England.

1,445,455 Construction of Wings and Like Parts of Aeroplane Flying Machines and Other Aircraft. Hugh Oswald Short, Rochester, England.

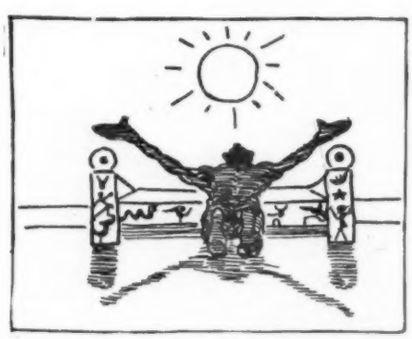
1,445,482 Test Indicator. Clinton H. Bull, Columbus, Ohio.

G. E. A. Hallett with General Motors

Maj. George E. A. Hallett, Air Service, has resigned his commission in the U. S. Army, and has accepted a position with Mr. Kettering in the General Motors Research Corp. of Dayton, Ohio.

Major Hallett was Chief of the Power Plant Section of the Engineering Division, McCook Field from November, 1918, to his resignation. In this capacity he was in complete charge of all Air Service work on the design, development, testing and installation of aircraft engines and their accessories, and he built up a very efficient organization there to carry on this work as well as making several good engines, superchargers, etc. During the war Major Hallett organized several large Air Service Mechanics' Training Schools. His present work is not connected with aeronautics.

Rain Making through the Ages



Egypt, 2000 B. C.

The Missing Link

McCook Field, 1922

ARMY AND NAVY AIR NEWS

Air Service

Army Orders—Capt. Stephen J. Idzorek, A.S., from Long Island air reserve depot, upon closing of latter, to Middletown A.I.D., Middletown, Pa.

First Lieut. Benjamin B. Cassiday, A.S., from Hawaiian Dept. to report to Adjutant General.

First Lieut. John A. Wyatt, A.S., previously ordered from Americus A.I.D., Americus, Ga., to Chanute Field for course of instruction at Photo School, is re-directed to Kelly Field.

Capt. Frank W. Wright, A.S., from Hawaiian Dept. to Crissy Field.

First Lieut. Russell L. Maughan, A.S., from Crissy Field to Kelly Field with Advanced Flying School.

First Lieut. George H. Brown, A.S., from Station Hospital, Ft. Sheridan, Ill., to Chanute Field.

First Lieut. Austin W. Martenstein, A.S., from Richmond A.I.D., Richmond, Va., to Mitchel Field.

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Death Notices—The Adjutant General's Office has issued the following death notices:

First Lieut. Rupert Julian, died in airplane accident at Schofield Barracks, Jan. 29, 1923. Born in Indiana Jan. 8, 1899. Enlisted in Av. Sec., Sig. C. Aug. 8, 1917; Sec. Lieut. July 29, 1918. He was on duty at Caruthers Field, Ft. Worth, Tex., from July 25, 1917, to Sept. 3, 1918; at Call Field, Wichita Falls, Tex., and Langley Field, Hampton, Va., to date of discharge from emergency commission; on duty at Chanute Field, Ill., Oct. 5 to 12, 1920; enroute to and at Carlstrom Field, Fla., to Jan. 11, 1921; under advanced training at Air Service Operations School, Ft. Sill, Okla., to Apr., 1922; at Crissy Field, Calif. Apr. 20 to 25, 1922; enroute to Hawaii to May 3 1922; on duty at Schofield Barracks, H. T., to date of death. He was a graduate of A. S. Obs. School, 1921 ,and Field Artillery School, 1921.

First Lieut. Carl H. Meyers, died at Luke Field, H. T., Jan. 21, 1923. Born in Missouri Nov. 3, 1881. Enlisted in Av. Sec. Sig. C. Nov. 5, 1917; Sec. Lieut. A.S.N.A. June 14, 1918; First Lieut. A. S. July 1, 1920. He was on duty at Rich Field, Waco, Tex., from June 14 to 27, 1918 ;at Camp Dick, Tex., to Aug. 6, 1918; at Love Field, Tex., to Nov. 16, 1918; at Gerstner Field, La., to Jan. 28, 1919; at Ellington Field, Tex., to July 5, 1919; at Ft. Bliss, Tex., to Aug. 8, 1919; at Marfa, Tex., to Sept. 3, 1920; at Post Field, Ft. Sill, Okla., to Nov. 4, 1920; at Marfa, Tex., to June 30, 1921; at Kelly Field, Tex., to Nov. 3, 1921; on leave of absence to Jan. 3, 1922; on duty at Mather Field, Calif., to July, 1922; enroute to Hawaii July 10 to 15, 1922; on duty at Schofield Barracks and Luke Field H. T. to date of death.

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New Airplanes for the Primary Flying School—Forty new airplanes have been allotted to the Air Service Primary Flying School, Brooks Field. These new ships will be delivered within the next three months, and include the following: Twenty VE7, nine TA3, one TW3 and ten SE5A. The VE7 will be used for dual instructing, and a test will be made to determine the relative value of this type of plane over the JN's, the present type of plane used for dual instructing. The same test will be made with the nine TA3, a 2-seater training airplane with the 110 hp. LeRhône engine. It is a single bay, externally braced biplane, stick and wire construction of wings, with a welded steel fuselage. The cockpit provides for two men, side by side, with dual controls. The TW3 is substantially the same airplane, except that the crew is further back, thus improving vision, and the 180 hp. Wright engine is installed.

Improvements at Mitchel Field—The past year has seen a great change in Mitchel Field. As the year started the post gave the impression of being ready for "salvage." Buildings were unpainted, roads were merely mud and ruts, sidewalks were unknown, and the hangars, then located in a sea of mud, leaked to a degree where they offered practically no protection to the planes and equipment.

This condition was due in a considerable degree to the uncertainty of the future of Mitchel Field. Sometime before the field had been ordered abandoned, and maintenance work had stopped never to have been effectively resumed. With the beginning of 1922 the work was started with a rush. By April the roads were placed in serviceable condition and every bui'ding painted. During this time one Pursuit and one Bombardment squadron were recruited, organized, and forwarded to France Field, Panama Canal Zone. June marked the beginning of intensive training not only for the post but for the Officers' Reserve Corps and the National Guard. While this training was in progress, and without interfering with it, the hangars were moved to form a straight line, re-roofed, and concrete laid between them. A tarvia road was laid the length of the flying field in front of the hangars.

Immediately upon the completion of the summer season of training, extensive war maneuvers in conjunction with the Coast Artillery Corps, Field Artillery and Officers' Reserve Corps commenced. At the same time the laying of a system of sidewalks, totalling over two miles, were started. These sidewalks were completed two months later.

At the start of the year there was an acute shortage of officers and non-commissioned officers' quarters. By energetic construction work in remodeling temporary barracks, this shortage has been overcome, and now all married members of the garrison are comfortably housed. The Officers' Club has been enlarged and improved; the noncommissioned officers' quarters now have a comfortable and attractive club house, and the Enlisted Men's Club, formerly a Red Cross House, has been renovated.

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Col. F. C. Marshall and Lieut. C. L. Webber—The names of Col. Francis C. Marshall, of the 24th Cav., and 1st Lt. Chas. L. Webber, A.S., who disappeared while on an airplane flight somewhere between Rockwell Field and Ft. Huachua, Ariz., on Dec. 9 have been stricken from the rolls of the Army, as of Feb. 9, 1923.

Colonel Marshall, who was born in Illinois in March, 1867, graduated from the Academy in 1886, and from that date until his death, served continually in the Army in the Cavalry Corps. He served in the World War as a Brigadier General and in campaigns against the Sioux Indian 1890-91; China Relief Expedition, 1900; and in the Philippine insurrection in 1902.

It was while on an inspection tour of the various cavalry posts in the Southwest that he met his death in an airplane accident. With Lieutenant Webber he left Rockwell Field on Dec. 7 intending to fly to Tucson, Ariz., but neither the officers nor the plane has been found. Colonel Marshall had received the Distinguished Service Medal for meritorious and distinguished services in command of the 2d Brigade, 1st Division, during the Meuse-Argonne Offensive in 1918. He also had been awarded the Croix de Guerre with palm.

Lieutenant Webber was born Jan. 15, 1896, in Colorado, from which state he was appointed First Lieut., A. S., July 1, 1920. He enlisted as private in the Aviation Section, Signal Corps, May 18, 1918, and was made a Second Lieutenant, Nov. 12, 1918, serving at Selfridge Field to February, 1919; at Kelly Field to June, 1919; with 2d Aero Sqd., Rockwell Field, to Nov. 29, 1919; in the Philippine Dept. to Dec. 15, 1921; at Rockwell Field to date of death.

Air Service Squadron Flight to Porto Rico—On or before March 1, a flight of six Army Air Service planes, carrying twelve officers will leave Lake Charles, La., on a return flight to Porto Rico, according to an announcement by Secretary of War Weeks.

Airplanes to be used will be DH4B's, which are now being put in condition at San Antonio, Tex. They are all being equipped with 135 gal. tanks capable of supplying gas for non-stop flights of 500 miles. The route laid out will be from Lake Charles, La., to Maxwell Field, Montgomery, Ala., thence to Arcadia, Fla.; to Havana, Camaguey, and Guantanamo, Cuba; Port-au-Prince, Haiti; Santo Domingo, and thence to San Juan. P. R. Landing at Havana will be made at the airport near Camp Columbia, about seven miles west of the city. The route from the States to Port-au-Prince is that flown by Lt. Col. T. C. Turner, of the Marine Corps Flying Service, who made a successful flight to Haiti and returned in 1921.

Capt. Thomas G. Lamphier has been designated as the Commanding Officer of the flying expedition. He is a cross-country pilot of considerable experience, and an officer who ranked as a Major during the World War. He is now commanding the Air Service Troops at Fort Sill, Okla.

First Lieut. Chas. E. Austin, one of the pilots of the expedition attempted a flight from Panama to Kingston, Jamaica, two years ago with a land plane and no surface assistance, but was forced down with a ruined propeller. Another participant, 1st Lt. Erik H. Nelson, took part in the Alaska Flight, in 1920.

The other officers also have long flying experience. They include First Lieuts G. C. McDonald, N. Longfellow, R. K. Stoner, J. A. Woodruff, C. V. Haynes, D. H. Dutton, G. Kirksey, I. G. Moorman, and E. T. Selzer.

After landing at Camaguey, Cuba, the flight will next stop at Guantanamo landing at Hicacel Beach, opposite the Naval Station. At Port-au-Prince they will land at Bowen Field, part of the Marine Flying Station. The next stop will be at the Marine Flying Station at San Domingo about four miles from the city. The last stop will be at San Juan, where the planes will be overhauled for their return trip over the same route.

Secretary Weeks explained that the trip was made in the interest of flight training and was to be undertaken during the dry season when the best flying conditions prevailed. The course is over all kinds of terrain and water, giving the men varied experience. It will also serve to demonstrate the ease with which aerial communication may be established with our insular possessions.

Although the route extends only as far as Porto Rico, it is hoped by the Air Service that permission may be obtained from the War Department to make a flight over the same route and to the Leeward and Windward Islands during the next dry season and possibly to the northern shore of South America and Panama returning via Central America and Cuba.

* * *

Nominations—Nominations sent to the Senate Jan. 27, 1923, include the following Air Service officers:

To be Major, A. S., John Henry Pirio.

To be Captains, A. S., William Francis Donnelly and Richard Derby.

Naval Aviation

Long Flight of Torpedo Plane—Ferrying a new torpedo plane from the Naval Air Station Anacostia to Key West, a distance of 1160 miles in about 16 hr., is the undertaking of Lt. T. N. Thweatt, of the Torpedo Squadrons. Lieutenant Thweatt left Anacostia in the DT2, A-6035, with a mechanic on Friday, Feb. 9, and is now enroute. His first stop was to have been Hampton Roads a distance of 140 miles. Thence his route is as follows:

2nd Day

Hampton Roads to Morehead City, N. C., 175 miles.
Morehead City to Georgetown, S. C., 180 miles.

3d Day

Georgetown to Fernandina, Fla., 205 miles.
Fernandina to Titusville, Fla., 170 miles.

4th Day

Titusville to Miami, Fla., 160 miles

Miami to Key West, 130 miles.

The total distance is 1150 miles and the time allotment is set as 16 hr. 35 min. flying time, each leg being of about 2 to 2½ hours flight.

* * *

Line Officers Recommended for Aeronautics—Out of forty-one applications from line officers of the Navy, nine have been selected by a special board for service in the Bureau of Aeronauties in connection with the lighter-than-air service. These men together with the regular lighter-than-air officers of the Bureau will compose the two crews of the Navy's new airships ZR1 and ZR3, now building.

Comdr. J. H. Klein, of the Bureau of Navigation, has been selected as Executive Officer of the ZR1, at Lakehurst. The commander of the ZR1 will probably be Comdr. F. R. McCrary, Commanding the Lakehurst Station today, but no official recommendations have yet been made to the Bureau of Navigation by Admiral Moffett, Chief of the Bureau of Aeronautics. The selection of the Air Officers who will be assigned to the two airships has not been made as the craft are not yet completed, it was stated by Admiral Moffett.

The other Naval line officers selected for assignment to the Bureau for Lighter-than-Air Service are: Lt. Cmdrs. Lewis Hancock and M. R. Pierce, Navigators; and Lts. C. E. Rosendahl, Jas. C. Arnold, H. V. Wiley, B. F. Staud, E. H. Kinkaid, and W. O. Bailey as Watch Officers.

Only four watch officers will be selected out of the six names approved by the Board for service on the Airships.

* * *

Naval Orders—Lieut. Edwin D. McMorries (Med. C.), det. Nav. Hosp. Pensacola, Fla.; to U.S.S. Detroit when commissioned.

Lieut. William H. Wynn (Med. C.), det. 3d Nav. Dist.; to Nav. Air Sta. Pearl Harbour, T. H.

Lieut. j.g. Nicholas A. Brown (S.C.), det. U.S.S. Quail; to Nav. Air Sta. Hampton Roads, Va.

Pay Clk. John J. MacDonald, det. Santo Domingo; to Nav. Air Sta. Anacostia, D. C.

Comdr. John H. Towers, det. Nav. Air Sta. Pensacola, Fla., to Assistant Naval Attaché, American Embassy, London, England.

The following officers are det. Nav. Air Sta. Pensacola, Fla.; to Aire. Sqds. Battle Fleet: Lieuts. Donald M. Carpenter, Henry S. Kendall, Dixie Kiefer, John F. Moloney, Forrest P. Sherman, Ralph Wyman; Lieuts. j.g. Eugene F. Burkett, Carleton C. Champion, Thomas S. Combs; Ens. Frank H. Conant, John B. Lyon, Clyde W. Smith, William G. Tomlinson, Oscar A. Weller.

Lieut. Joseph C. Arnold, det. Off Nav. Inspector of Eng'g Material, Philadelphia, Pa.; to Nav. Air Sta. Lakehurst, N. J.

* * *

Commander Towers Air Attache in London—Comdr. John H. Towers, of Bureau of Aeronautics, recently at Pensacola and now stationed at Washington, has been designated as Asst. Naval Attaché at London it was announced recently by the Navy Department.

* * *

Scouting Planes at Panama—Fourteen of the Navy's Scouting Planes have safely arrived at Panama, C. Z., it was announced by Secretary of the Navy Denby. The other four of the eighteen planes which started South on Jan. 12, have reached Port Limon, twenty miles distant. The total flight was about 3000 miles in length and no casualties have been reported.

Howard E. Coffin, Pres. B.H. Mulvihill, V. Pres. B.F. Castle, Treas. John B. Coleman, Rec. Sec.

Official Bulletin of National Aeronautic Association of U.S.A.

Col. H.E. Hartney, General Manager Cable Address, Nataero
National Headquarters, 26 Jackson Place, Washington, D.C.

The National Aeronautic Association of U.S.A. assumes responsibility for the statements under this heading

During the past month, the activities of the Association have been along constructive lines and several particularly important events have taken place which contribute to the growing history of aeronautical development in this country and throughout the world.

Federation Aeronautique Internationale

The National Aeronautic Association of U.S.A. is now the sole American representative of the F.A.I., and in the future, all contests, flights for records, sports, and meets in this country, in order to be homologated for purposes of world's records, must be under the rules and regulations of the Association by virtue of its affiliation with the Fédération Aéronautique Internationale.

Under the F.A.I., the Association appoints Committees responsible for the enforcement of the rules of the Federation, issues licenses to pilots, and for meets and races; sanctions meets, races and sports; classifies aircraft, examines and passes on regulations and programs for contests; ratifies results; may bar suspended persons from participating in events; passes upon the advisability of events; designates approval of officials and appoints time-keepers; gives official ratification to records and imposes penalties; pronounces the homologation of international events, and gives final decisions as to international records.

Pulitzer Races at St. Louis

The Contest Committee, in concurrence with the Army and Navy Air Services, has selected St. Louis as the place where the Pulitzer Cup Races for 1923 will be held. St. Louis appeared to be the most suitable location for the Races, under the new conditions and regulations imposed by the F.A.I. In connection with the Pulitzer Races will be held the Annual Convention of the Association and the Second Air Congress, in conjunction with the Aeronautical Chamber of Commerce, the National Advisory Committee for Aeronautics, the Society of Automotive Engineers, and kindred bodies.

The Contest Committee is now consulting with aircraft manufacturers and Army and Navy officials regarding the details of the Pulitzer Races in order that a larger number of contestants may enter these races than participated last year when the details of the races were not decided upon until very late in the season. It is anticipated that a number of foreign contestants will be present from Great Britain, France, Belgium and Italy.

Collier Trophy

The Collier Trophy Committee, a sub-committee of the National Contest Committee, with Lt. Col. Frank P. Lahm, U.S.A., Porter H. Adams, Vice President and Governor First District, George W. Lewis, E.E., Executive Officer of the National Advisory Committee for Aeronautics, Chairman, and B. Russell Shaw of National Headquarters as Secretary, awarded the Collier Flying Trophy for the greatest achievement demonstrated in the actual use of aviation in 1922, to the personnel of the Air Mail Service.

In connection with this award the Committee stated that: "The wonderful achievements of the Air Mail Service in completing a year's operation along the different routes from coast to coast and in all conditions of weather without a single fatal accident, is, in the Committee's opinion, the greatest achievement in aviation made in the past year. This performance denoted substantial progress in the practical application of airplanes to the purposes of commerce and other peaceful pursuits. This excellent performance has been attained through the development of an inspection and operating system, by the Air Mail Service which made possible the most successful demonstration of the practical application of airplanes for commercial purposes."

Accordingly on Monday, Feb. 5, 1923, Dr. George W. Lewis, Chairman of the Committee flew from New York in an Army Mail plane, piloted by Harold T. Lewis, Air Mail Pilot, having in custody the Collier Trophy and landed at Bolling Field, Washington D. C., where the ceremony of presentation was carried out. The presentation speech was made by Dr. Lewis for the Association and the Committee and the speech of acceptance, by Postmaster General Hubert Work, as representative of the Air Mail Personnel.

Among those present at the exercises were First Assistant Postmaster General John H. Bartlett; Second Assistant Postmaster General Colonel Paul Henderson in charge of Air Mail; Third Assistant Postmaster General Warren L. Glover; Fourth Assistant Postmaster General Harry H. Billany; Carl F. Egge, General Superintendent of Air Mail; and large staff of superintendants and air mail pilots; Admiral Wm. A. Moffett, Chief of the Bureau of Aeronautics of the Navy; Gen. Mason M. Patrick Chief of the Army Air Service, officers of the Army and the Navy Air Services, and officers and members of the National Aeronautic Association.

Mackay Army Trophy

The Contest Committee, in concurrence with Maj. Gen. Mason M. Patrick, Chief of the Army Air Service, and with the approval of the Board of Governors of the Association, sanctioned the award of the Mackay Army Trophy to Lieuts. John A. Macready and Oakley G. Kelly, for the most outstanding flight of the year, 1922, it being an endurance flight when these two pilots stayed in the air 35 hr. 18 min.

The trophy is an immense silver cup presented by Mr. Clarence Mackay to be competed for annually by officers of the U. S. Army, under rules to be made each year by the War Department, or, in the absence of a contest, to be awarded annually by the War Department to the officer or officers who make the most meritorious flight of the year.

Coming Aeronautical Events

AMERICAN

May — *National Balloon Race.*

Oct. 1-3 — *National Airplane Races, St. Louis, Mo.*

FOREIGN

1923

March 1 — *Entries close for Schneider Cup Race.*

March 15 — *Entries close for Dutch Height Indicator Competition.*

March 23 — *Entries close for Gordon Bennett Balloon Race.*

June 25-30 — *International Aero Congress, London.*

July 20-*Aug.* 12 — *International Aero Exhibition, Gothenburg, Sweden.*

Aug. 6-27 — *Sailplane Meet, Vauville, near Cherbourg, France.*

Sept. 23 — *Gordon Bennett Balloon Race, Brussels, Belgium.*

Dec. 1 — *Entries close for French Engine competition.*

Mr. Coffin Goes to Rome

One of the most important missions from the United States to Europe since the War is that of the delegates of the International Chamber of Commerce, who sailed on Feb. 10 for Rome. Howard E. Coffin, President of the National Aeronautic Association, with Col. Harold E. Hartney of National Headquarters, as his aid, are among the officials attending the Congress. For the first time in the history of international commerce conferences, aeronautics is to be represented by officials of a national aeronautic association. Mr. Coffin as the delegate of the National Aeronautic Association, and a member of the Air Transportation Group in Rome, will represent the expanding interests of aviation in the United States. Mr. Coffin and Colonel Hartney will further consult with officials of the F.A.I. at Paris and leaders in aviation in England, France, Italy and Spain regarding projected contests, air meets, and sports in the United States with the expectation that foreign entrants will be secured.

Honorary Membership to Mr. Edison

On Feb. 12, 1923, honorary membership in the National Aeronautic Association of U.S.A. was conferred upon Thomas A. Edison, on the occasion of his 76th birthday. Presentation of the parchment certificate of honorary membership was made by Dr. Michael I. Pupin, of Columbia University, formerly a member of the National Advisory Committee for Aeronautics. From National Headquarters, Vice President B. H. Mulvihill, and Director of Information, C. A. Tinker, were present at the ceremonies, which took place at the Edison plant at East Orange, N. J.

Gliding Contests

The Committee on Gliding and Soaring Flight, of which Orville Wright is Chairman, has sent out questionnaire to the mayors of the cities and towns throughout the country together with the requirements of terrain necessary for holding glider contests, in an effort to secure information to enable them to decide where glider meets may be held in this country. At the same time, arrangements are being made to carry out gliding contests early in the coming season, with the expectation that Maynerol and other expert gliding pilots from Europe will participate.

Meeting of the Board of Governors

The Second meeting of the Board of Governors of the Association was held on Jan. 25, 1923, at the Racquet Club, Washington, D. C. Vacancies on the Board of Governors were filled by the election of Vincent Astor and Marshall Field, Jr., of the Second District, and Charles A. Moffett, of Birmingham, Ala., Fourth District.

A change in the by-laws, paragraph 10, article 11, under heading "Objects of Incorporation" was voted upon and the following clause added: "To supervise, control, and as far as possible, encourage, direct and advise, with reference to the sport of flying and the use of air machines to the end that such sport may be so conducted and so employed as to advance the art of flying, the science of aerial navigation, and the production of aircraft."

The following resolution was unanimously carried upon the announcement by Porter H. Adams, Vice President and Governor of the First District, that Capt. Henry C. Mustin, Assistant Chief of the Bureau of Aeronautics of the Navy Department, was seriously ill at the Naval Hospital at Washington: "That a letter expressing the regrets and sympathy of this body be sent to Mrs. Mustin." This resolution was carried out.

Enters the Air Blockade

The Hague correspondent of the London *Times* understands that the French proposed at a conference of the jurists at the Peace Palace, that international legal sanction for an aerial blockade should be obtained, even though, owing to physical conditions, such a blockade could not be made effective in the sense required by international law.

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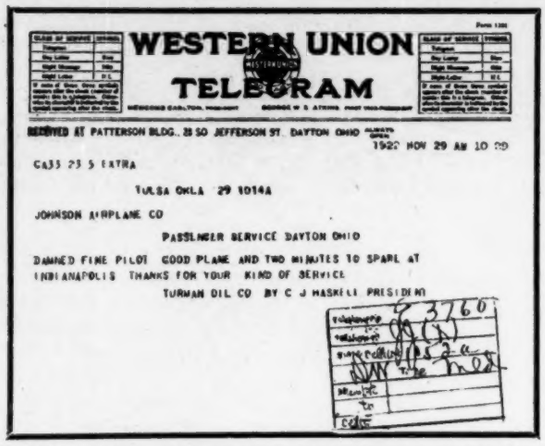

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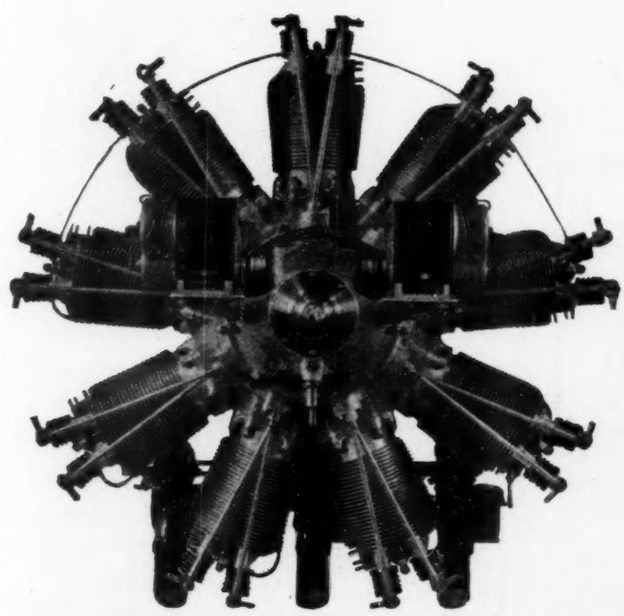

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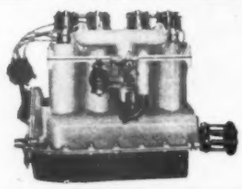

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